

distribution of oceanic life that has no parallel on land; and facts in the migration of marine animals and plants that were formerly accounted for by assuming that they possessed greater powers of withstanding changes of temperature, are now accounted for by conditions more closely resembling those that obtain on the land."

Dr. Hooker then referred to the lamented death of Dr. von Willmoës-Suhm, and to the arrangement whereby Prof. Huxley has been able to act as Prof. Thomson's substitute at Edinburgh.

Speaking of the Meteorological Committee, Dr. Hooker stated that "the anomalous connection between the Royal Society and the Meteorological Office on the one hand, and between that office and the Government on the other, is likely soon to be terminated, the Lords Commissioners of the Treasury having appointed a Committee to inquire into the working of the present office, and the value of the results hitherto obtained. According to the instructions of the Treasury, the inquiry is to be directed to two principal points of scientific interest, viz. (1) How far the statistics hitherto collected have led to the discovery or confirmation of meteorological laws. (2) How far the principles upon which storm-warnings are given have been justified by results."

While pointing out that America was in some respects more advantageously situated than England for meteorological investigation, Dr. Hooker showed that, on the other hand, England has advantages for promoting the study of terrestrial meteorology that no other country has—namely, her foreign possessions and colonies, and the command of the telegraphs with which the ocean is in process of being crossed in every direction. "We have known," he says, "what it is to read at our breakfast-tables telegrams from all parts of the world of the prices of stocks and of political incidents of the previous day; why should we not, then, obtain daily statistics of the climatic conditions of these and other remote regions, and inaugurate in England a system of meteorological registration which, if its elements were obtained from but a few well-selected spots, would instruct and interest every intelligent person in the climate of the globe, and in the end lead to scientific results of great value."

Dr. Hooker cannot but think that the Committee of the Treasury will have the opportunity of recommending to Her Majesty's Government the adoption of measures that would greatly increase the scientific efficiency and public interest of the Meteorological Office.

Dr. Hooker referred in terms of disappointment to the unexpected interpretation which has been put by the Law Lords on the terms of the Gilchrist bequest, whereby no part of it can be allotted to "the advancement of learning" *i.e.* of research, but all to the propagation of knowledge. Dr. Hooker hopes that a future and more enlightened generation "will introduce into the theory and practice of the law an interpretation of the 'advancement of learning' more in harmony with scientific ideas and the requirements of the age."

The president concluded his address by alluding to the Government Loan Collection of Scientific Instruments, which is being formed at South Kensington.

"In the proposed exhibition not only are modern scientific methods and instruments, and the various methods of practical instruction in science to be fully dealt with, but it is also proposed that the history of science shall be illustrated by the actual instruments which have been employed from the time of Galileo downwards, in those critical experiments and discoveries which mark the principal stages along the road of progress."

THE FRENCH ACADEMY AWARD OF PRIZES

AT the anniversary meeting of the Paris Academy of Sciences on Dec. 23 the following prizes were awarded as the result of the competition for 1875:—

1. Grand prize in the Mathematical Sciences, not awarded, and the subject re-set for competition in 1878—"Investigation of the elasticity of crystalline bodies from the double point of view of experiment and theory."

2. Grand prize in the Physical Sciences. The subject was, "To investigate the changes which take place in the internal organs of insects during complete metamorphoses." The prize was awarded to M. Künckel, Assistant-Naturalist at the Paris Museum.

3. The Poncelet prize, to M. Darboux, for his analytical and geometrical works.

4. The Montyon prize in Mechanics, not awarded.

5. The Plumey prize of 2,500 francs was awarded to M. Madamet, French naval engineer, for an apparatus invented by him to indicate at any moment the number of turns made by a marine steam-engine by the simple inspection of a dial, and without the need of employing a watch.

6. Fourneryon prize of 1,000 francs, to M. Sagebien.

7. The Lalande prize in Astronomy, to M. Perrotin, of the Toulouse Observatory, for his astronomical work generally, but specially for his discoveries of small planets.

8. The Lacaze prize in Physics, 10,000 francs, to Prof. Mascart, for his researches on the solar spectrum, on the measure of the dispersion of gases, on the influence which the motion of the earth has on optical phenomena, and for his investigation of the rate of light.

9. Montyon prize in Statistics, to M. Borius.

10. The Jecker prize of 5,000 francs awarded to M. Edouard Grimaux for numerous researches in Chemistry, more especially in chemical synthesis.

11. The Lacaze prize in Chemistry, 10,000 francs, to M. Favre, Dean of the Faculty of Sciences of Marseilles, for his great work on the transformation and equivalence of chemical, physical, and mechanical forces. It was while pursuing his researches in thermo-chemistry, commenced thirty years ago in conjunction with Silbermann, that M. Favre was led to investigate the great question of the equivalence of work effected by forces of different origin. M. Favre, giving an experimental demonstration of the most ingenious of Joule's views, made use of his mercury calorimeter, in the form of a thermometer in whose reservoir may be placed one or more elements. He thus established that the heat developed by resistance to the passage of electricity in the conductors of a simple voltaic couple, is simply borrowed from the total heat due to the chemical action which engenders the current; if this resistance to the passage of electricity be annulled we obtain, as the work of the pile with closed circuit, the quantity of heat which will be due to chemical action alone without the transmitted electricity.

12. The Barbier prize in Medicine, to Prof. Rigaud.

13. The Desmazières prize divided between M. Eugène Fournier, author of two memoirs on the Ferns of Mexico and of New Caledonia, and M. Emile Bescherelle, author of two memoirs on the Mosses of the same countries.

Prizes 14, 15, and 16 not awarded.

17. Grand prize in Medicine and Surgery, to M. Onimus.

18. Montyon prize in Medicine and Surgery. These prizes, of 2,500 francs each, were awarded to M. Alph Guérin, M. Legouest, and M. Magitot respectively. "Encouragements" of 1,500 francs each were awarded to M. Berrier-Fontaine, to M. Pauly, and to M. Raphaël Veyssière.

19. The Bréant prize not awarded.

20. The Godard prize in Medicine, awarded to M. Alph. Hergott.

21. The Serres prize not awarded; but a reward of 3,000 francs was given (1) to M. Campana for his researches on the anatomy and physiology of the respiratory and digestive apparatus, and of the serous membranes of birds; and (2) to M. Georges Pouchet for a MS. work on the development of the skeleton, and especially the cephalic skeleton of osseous fishes compared with that of some other vertebrates.

22. The Chaussier prize in Medicine, of 10,000 francs, divided between M. Gubler, M. Le Grand du Saulle, MM. Bergem and l'Hôte, and M. Manuel.

23. The Montyon prize in Experimental Physiology, 764 francs, to M. Faivre, Dean of the Faculty of Sciences of Lyon, for his researches on the functions of various parts of the nervous system of insects. M. Faivre has established that among insects the localisation of function and the division of physiological work, are carried further than is generally supposed.

24. The Lacaze prize in Physiology, 10,000 francs, awarded to M. Chauveau, Director of the Veterinary School of Lyon, for his researches on virulent and contagious diseases. M. Chauveau has proved that the virulent activity of the vaccinal, variolar, and glanderous virus is not due to the liquid, as a whole, but oftenest to corpuscles which are held in suspension. M. Chauveau has, moreover, discovered that the agents of contagion have not only as a vehicle the liquids which come from the bodies of the sick, but that they may be transmitted to healthy animals by means of air and water. He shows that the human variola is a distinct malady by itself, of which the primary source is the organism of the horse.

25. Montyon prize, in connection with unhealthy occupation, 2,500 francs, to M. Denayrouse for his invention to protect workmen while in the midst of an irrespirable medium.

26. The Tremont prize, 1,000 francs, having been awarded for three years, 1873-75, to Prof. A. Cazin, an "encouragement" of 500 francs was awarded to M. Sidot for his researches on the various conditions of carbon and on the protosulphuret of carbon.

27. The Gegner prize of 4,000 francs was awarded to M. Gauguain to assist him in pursuing his researches on electricity and magnetism.

28. The Laplace prize, consisting of a complete collection of the works of Laplace, was awarded to M. Bonnefoy, "dux" of the École Polytechnique in 1875.

NOTES

PROF. HUXLEY, on Tuesday last, at the Zoological Society, in his paper on *Ceratodus*, in describing the brain of that fish for the first time, showed how closely it approached that of the Lepidosiren, and how that in some points it resembled the Selachian rather than the Ganoid type. He gave cogent arguments against the theory of Gegenbauer with reference to the typical conformation of the fore limb, and laid special stress on the affinities of the animal with *Chimæra*.

THE Crown Prince and Princess received the leading German scientific men on Monday at Berlin, in order to confer upon the means of securing an adequate representation of Germany in the exhibition of scientific instruments to be held in London next May. Besides Doctors Achenbach and Falck, the Ministers of Commerce and Education, there were present Herren Kirchhoff, Dubois-Reymond, Dove, and Foerster, as physicists; Herren Hoffmann and Maghellans, as chemists; and Herren Reuleaux and Siemens as representatives of mechanical science. Mr. Cundiffe Owen, the Director of the South Kensington Museum, was present at the audience. A German committee was formed to promote the objects of the meeting. This is the latest adhesion to the scheme, and we are now able to say that the arrangements are complete in the case of Germany, the United States, Belgium, Holland, and Switzerland. In all these countries, committees appointed by Government are collecting instruments either for the Research, the Historical, or the Educational department.

THE following extract from the Order Paper of the Legislative Council of New Zealand, Oct. 19 last, seems to show that a supposed prehistoric man may perhaps become the subject of a judicial inquiry. The skeleton in question was exhumed in the course of excavations made for Moa bones and associated human remains by Dr. Haast, as detailed in his paper ("Trans. N.Z. Institute," vol. vii.), and as that author holds strongly to the Palæolithic age of the deposit, while others assert its comparatively recent date, it will be interesting to observe what light the coroner's inquest will throw on the subject:—"The Hon. Mr. Mantell to move, That there be laid upon the table copies of any proceedings at any inquest held upon a body found, under suspicious circumstances, in a cave known as the 'Moa Bone Point Cave,' at Sumner, in the Province of Canterbury, on Saturday, Oct. 19, 1872, whose skeleton is reported to be in the Christchurch Museum. And, in the event of no such inquest having been held, that the Government lay upon the table a statement of the reasons why no inquest was held; or assure the Council that instructions will be forthwith issued to the proper authorities to make such inquiry as may, if possible, lead to the identification of the individual whose body was so found, and set at rest any doubts as to the manner in which he came by his death."

WE would draw the special attention of our readers to a paper in the current number of the *Journal of Mental Science*, by Dr. Herbert B. Major, entitled "Observations on the Brain of the Chacma Baboon." Having, in his Graduation Thesis before the University of Edinburgh, shown that in the smaller apes the

size of the nerve corpuscles of the cortex of the occipital lobes was less than in the human subject, the author has analysed, layer by layer, the cortical substance of the brain of the chacma and man, his observations as yet being entirely negative. The points investigated are the number and appearance of the layers; the character of the nerve-strata; also the vessels and the white medullary substance.

THE large female chimpanzee, Mafoka, at Dresden, which has recently attracted so much attention, died, we regret to say, a short time ago. Dr. Meyer promises us an account of the animal.

A PAPER by Prof. Reinhardt has recently been published at Copenhagen, on the Glyptodon remains of Brazil, together with the account of a new species, *Glyptodon (?) dubius*.

THE Éloge of General Poncelet at the anniversary of the Paris Academy was the occasion of a pathetic scene. A tribune had been set apart for the use of Poncelet's widow, who was sitting with her lady companion. When M. Bertrand referred to the attentive care which had surrounded the last days of the departed geometer, and the real worship paid to his memory by the noble woman who had been his wife, Madame Poncelet could not restrain her weeping, and her emotion was communicated to the whole audience. The house was crowded by friends and pupils of Poncelet.

THE Meteorological Society of Paris has elected M. Janssen president for 1876. Mr. R. H. Scott, the director of the English Meteorological Service, has been nominated a member of the Council, and M. H. St. Clair-Deville one of the vice-presidents.

AT a recent meeting of the Vienna Geological Society, the Director, M. von Hauer, welcomed Dr. E. Tietze, who, after more than two years' sojourn in Persia, had safely returned to Vienna. He made extensive geological researches, especially in Mount Elburz, and eastward as far as Asterabad and Sharood. He visited, besides, the environs of Asabeidshan, Ispahan, Chamjar, and the province of Farsistan, as also the salt desert south-east of Teheran.

THE "Results for 1873 of the Meteorological and Magnetical Observations taken in Victoria, Australia," have been received. In addition to the usual averages, which appear to be carefully made, Prof. Ellery gives valuable summaries of electrical phenomena, hailstorms, frosts, snow, sleet, gales, and strong winds, together with a detailed statement of the "hot winds" which have occurred during the year in different parts of the colony, and which form so important a feature of the Australian climates. The publication is accompanied with a map, showing the positions of the meteorological stations and the telegraph and railway routes.

FROM Dr. King's recently-issued report on the cinchona plantations in British Sikhim, which we have previously noticed, we learnt for the first time that an efficient febrifuge was being made and sold at a cheap rate in India. On this subject Mr. Gammie, the resident manager of the Government plantation at Darjeeling, writing to Dr. Hooker, says: "We are now busy collecting cinchona bark, and propose to collect about ninety tons of dry bark this season, which we can easily do. We are manufacturing it on the spot into a cheap febrifuge, which is evidently quite as effectual as quinine. The medical department appears to be taking kindly to it, for within the last three months I have sent them over 600 lb. of it, and they are asking for more. We are now making from 40 lb. to 50 lb. a week, but are daily expecting orders to extend our factory, so as to make at least double that quantity. We have good hopes of being able to sell the febrifuge at one rupee an ounce and pay all expenses." Mr. Wood, the Government Quinologist, has, it appears, been appointed to officiate as Professor of Chemistry at Calcutta, and since his departure for the capital, the manufacture has fallen upon Mr. Gammie.